

ABSTRACT

**[0062]** Marine craft has a crushable frontal impact protection structure, comprising transverse bulkhead protecting passenger area; longitudinal crushable tubes; and transverse member. Webs and strengthen tubes, which may be made of extruded, heat treated aluminum; stainless steel; or plastic. Tubes in figs. 5 to 7 are splayed, to improve protection against angled impacts C. The forward ends of tubes are tapered, (fig. 3) to initiate deformation. Tubes may be hexagonal, round, or oval in cross-section. Fig. 8 shows longitudinal bulkheads, and transverse bulkhead in place of tubes. Fig. 9 shows longitudinal corrugated sheets; these may be mounted transversely. Fig. 10 shows how area filled with deformable cellular foam, to act as a buoyancy aid if hull is breached. Side and rear impact protection is also disclosed.